

CLAIMS

1. A semiconductor light emitting element having a resonator composed of paired multi-layer reflecting films disposed at a constant distance on a GaAs substrate and having a light emitting layer disposed at a loop position of a standing wave in the resonator, wherein relative to the light emitting layer, a multi-layer reflecting film on the GaAs substrate side is composed of plural layers of $\text{Al}_x\text{Ga}_{1-x}\text{As}$ ($0 \leq x \leq 1$) and a multi-layer reflecting film opposite to the GaAs substrate side is composed of plural layers of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$).

2. A semiconductor light emitting element as defined in claim 1, wherein the light emitting layer is composed of a single- or multi-layer film of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$).

3. A semiconductor light emitting element as defined in claim 1 or 2, wherein a current constricting structure of an insulation layer or the same-conductive layer as the GaAs substrate is disposed above the light emitting layer.

4. A semiconductor light emitting element as defined in claim 3, wherein the current constricting structure is formed by a layer of $\text{Al}_x\text{Ga}_{1-x}\text{As}$ ($0 \leq x \leq 1$).

5. A semiconductor light emitting element as defined in claim 3, wherein the current constricting structure is formed by a layer of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$).

6. A semiconductor light emitting element as defined in any

one of ~~claims~~ 3 to 5, wherein a current diffusion layer is formed above the ~~layer~~ forming the current constricting structure.

7. A semiconductor light emitting element as defined in claim 6, wherein the current diffusion layer is formed by a layer of $\text{Al}_x\text{Ga}_{1-x}\text{As}$ ($0 \leq x \leq 1$).

8. A ~~semiconductor~~ light emitting element as defined in claim 6, wherein the ~~current~~ diffusion layer is formed by a layer of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1, 0 \leq z \leq 1$).

9. A semiconductor light emitting element as defined in claim 6, wherein the current diffusion layer is formed by a transparent electrode having the transmittance of the emitted light, which transmittance is not less than 50%.

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10. A ~~semiconductor~~ light emitting element as defined in any one of claims 1 to 9, wherein the GaAs substrate has a surface inclined at an angle of not less than 2 degrees in the direction [011] or [0-1-1] from the plane (100).